

EFFECTS OF INTRODUCING ZOOXANTHELLAE ISOLATED FROM DIFFERENT HOSTS ON THE SURVIVAL AND GROWTH OF GIANT CLAM LARVAE: A PRELIMINARY STUDY

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Abstract

One of the important aspects of giant clams (Bivalvia : Tridacnidae) biology is the occurrence of photosynthetic dinoflagellate symbiotic algae. These algae, known as zooxanthellae, are capable of transferring part of their photosynthetic product to the clams. Therefore, they have important role on giant clams nutrition. It has been reported that there are genetic differences among zooxanthellae. In the present study, giant clams larvae were introduced by zooxanthellae which were isolated from different hosts. The survivorship of giant clams larvae was monitored. Preliminary results showed that there were survival rates differences among the larvae introduced by zooxanthellae isolated from different sources.

Key words : giant clams, zooxanthellae, growth, survivorship

Introduction

One of the important aspects on the biology of giant clams (Tridacnidae) is the occurrence of single cell dinoflagellate algae, commonly called zooxanthellae. These symbiotic algae which can be found in the mantle of giant clams are capable of translocating part of their photosynthetic results into their hosts. This translocation, a part from filter feeding activities, has become one of the major nutrition sources of the giant clams (Klumpp and Griffiths, 1994).

Unlike corals where zooxanthellae are "given" by the parents, giant clams larvae have to acquire these algae from their immediate environment and in nature it occurs after metamorphosis. Therefore, in giant clams aquaculture practice zooxanthellae have to be introduced to the larvae.

There are reports which are stating that zooxanthellae from different hosts are infact not a single species as has been believed before (Rowan and Powers, 1991; 1992; Rowan and Knowlton, 1995; Baker and Rowan, 1996; Aisyah and Ambariyanto, 1998). These differences in species of zooxanthellae suggest that there is also possible differences on their photosynthetic and growth rates.

This study aims to investigate the influence of introducing zooxanthellae which are isolated from different hosts on the survival rate and growth of giant clam larvae.